Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A semiconductor device having at least one silicon carbide-containing layer which has been stabilized against substantial mechanical and thermal degradation, which comprises;

~~(a)~~ a silicon carbide-containing semiconductor substrate having a first and second major surface; ~~and~~

a contact comprising an electrically transparent diffusion barrier (ETDB) on at least one of the first and second major surface on the silicon carbide-containing layer;

~~(b)~~ an encapsulating insulative coating layer formed onto at least one of the first and second major surface of said silicon carbide-containing semiconductor substrate which protects said semiconductor device from mechanical degradation and from thermal degradation at temperatures above at least about 1000 °C.

2. (original) A device according to claim 1 including a ceramic substrate having first and second major surfaces, and

an adhesive layer adhering one of the major surfaces of the silicon carbide substrate to one of the major surfaces of the ceramic substrate,

the adhesive layer being stable to over 1000°C.

3. (original) A device according to claim 2 in which the coating layer is borosilicate glass.

4. (currently amended) A device according to claims 3 in which the adhesive layer is borosilicate glass and the ceramic substrate includes a layer of AlN or Al_2O_3.

5. (currently amended) A semiconductor device having at least one ~~Si~~ silicon carbide-containing layer bonded to an underlying substrate which has been encapsulated and stabilized against substantial mechanical and thermal degradation, which comprises;

~~(a)~~ a ~~Si~~ silicon carbide-containing semiconductor substrate having a first and second major surface; and

a contact comprising an electrically transparent diffusion barrier (ETDB) on the silicon carbide containing layer;

~~(b)~~ an underlying substrate having a first and second major surface; and

~~(c)~~ an adhesive-encapsulating coating layer which bonds at least one of the first and second major surface of said ~~Si~~ silicon carbide-containing semiconductor substrate to one of the first and second major surface of said underlying substrate and which is coated onto at least one of the first and second major surface of said ~~Si~~ silicon carbide-containing semiconductor substrate;

said bonded SiC-containing substrate-underlying substrate structure and coating layer being formed without substantial mechanical or thermal degradation at temperatures less than 1000 °C. and the coating layer being operative for protecting said semiconductor device from mechanical degradation and from thermal degradation at temperatures above at least about 1000 °C.

6. (currently amended) A packaged SiC device which comprises:

~~(a)~~ a SiC die having a silicon carbide-containing layer;

~~(b)~~ a contact forming an electrical connection to the SiC die, the contact comprising an electrically transparent diffusion barrier (ETDB) on the silicon carbide containing layer;

~~(c)~~ a package substrate comprising a layer of AlN or Al_2O_3;

~~(d)~~ a metal conductor on the package substrate connected to the contact; and

~~(e)~~ a borosilicate glass layer adhering and interfacing the SiC die to the ~~AlN~~ package substrate.

7. (currently amended) A device according to claim 6 which further comprises a borosilicate glass layer which encapsulates the SiC die and the metal conductor ~~or the AlN~~ on the package substrate.

8. (original) A device according to claim 6 wherein the metal conductor is made of tungsten.

9. (currently amended) A resistive thermal device comprising;

a ceramic layer having a major surface;

a SiC-containing semiconductor substrate on the ceramic layer;

a contact comprising an electrically-transparent diffusion barrier (ETDB) on the SiC-containing substrates;

a metal layer on the major surface of the ceramic layer and on the contact on the SiC-containing substrate; and

a coating of borosilicate glass adhered to the major surface of the ceramic layer and covering the metal layer.

10. (original) A device according to claim 9 in which the ceramic layer is AlN.

11. (currently amended) A device according to claim 9 in which the ceramic layer is ~~Al_2O_3~~ Al_2O_3.

12. (original) A device according to claim 9 in which the metal includes a Pt thin film.

13. (new) A device according to claim 1 in which the ETDB comprises a transition metal-carbide layer.

14. (new) A device according to claim 5 in which the ETDB comprises a transition metal-carbide layer.

15. (new) A device according to claim 6 in which the ETDB comprises a transition metal-carbide layer.

16. (new) A device according to claim 9 in which the ETDB comprises a transition metal-carbide layer.

17. (new) A device according to claim 1 in which the ETDB layer comprises an osmium layer.

18. (new) A device according to claim 5 in which the ETDB layer comprises an osmium layer.

19. (new) A device according to claim 6 in which the ETDB layer comprises an osmium layer.

20. (new) A device according to claim 9 in which the ETDB layer comprises an osmium layer.

21. (new) A device according to claim 2 in which the silicon carbide-containing semiconductor substrate is mounted on the ceramic substrate in a flip chip configuration, in which the contact on the silicon carbide-containing layer is connected directly to a bonding pad on the ceramic substrate.

22. (new) A device according to claim 5 in which the silicon carbide-containing semiconductor substrate is mounted on the underlying substrate in a flip chip configuration, in which the contact on the silicon carbide-containing layer is connected directly to a bonding pad on the underlying substrate.

23. (new) A device according to claim 6 in which the silicon carbide-containing semiconductor substrate is mounted on the package substrate in a flip chip configuration, in which the contact on the silicon carbide-containing layer is connected directly to a bonding pad on the package substrate.

24. (new) A device according to claim 9 in which the silicon carbide-containing semiconductor substrate is mounted on the ceramic layer in a flip chip configuration, in which the contact on the silicon carbide-containing layer is connected directly to a bonding pad on the ceramic layer.